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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	**Application No.** 09/447,312	**Applicant(s)** BLANCHARD ET AL.	
	Examiner Taghi T. Arani	**Art Unit** 2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17 and 19-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17 and 19-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-17 and 19-27 have been examined and are pending.

Response to Amendment

2. Applicant's amendment filed 6/24/2005 necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-7, 16, 19, 22, 23-27 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 5,771,288 to Dent et al. (hereinafter "Dent").

As per claims 1, Dent teaches a method of adding packet-ordering information to a plurality of data packets [Abstract,] comprising:

applying error detection codes to each of the plurality of data packets [col. 1, lines 5-8, encoding each signal with a common block error-correction code]; and

masking each of the plurality of data packets to which the error detection codes have been applied with a corresponding one of a plurality of ordering masks, the plurality of ordering masks having a known order, the masking being performed in the known order [col. 3, lines 8-29, i.e. each coded information signal is then assigned a unique

scrambling mask, taken from a set of scrambling masks, having certain selected auto-and cross correlation properties (plurality of ordering masks) and that the scrambling masks are ordered based on the signal strength of their respectively assigned coded signals, i.e. masking being performed in a known order, see also col. 8, lines 13-21col. 19, lines 31-47],

As per claim 2, Dent teaches the method of claim 1 wherein masking comprises exclusive or'ing each of the plurality of data packets with a corresponding one of the plurality of ordering masks [col. 14, lines 49-51, modulo-2 addition (exclusive-OR operation) of the mask to the block coded signal].

As per claim 3, Dent teaches the method of claim 1 wherein each of the plurality of data packets to which the error detection codes have been applied is masked with one of the plurality of ordering masks [col. 14, lines 24-28], the plurality of ordering masks and the known order being known by a receiver such that the receiver can discern a relative packet order using the plurality of ordering masks [Dent, col. 8, lines 13-21, see also col. 24, line 46-col.25, line 5].

As per claim 4,Dent teaches the method of claim 1, wherein the plurality of ordering masks comprises cryptographic keys [col. 3, lines 34-39].

As per claim 5, Dent teaches the method of claim 1 wherein the plurality of ordering masks are masks other than cryptographic keys [col. 3, lines 34-36, at the system level, a code key is used to select one of scrambling masks, col. 3, lines 36-39, at the subscriber level], the method further comprising prior to applying error detection, encoding each of the plurality of data packets [col. 3, lines 36-39].

As per claim 6, Dent teaches his system is implemented on a CDMA protocol and communication systems involving portable or mobile telephones and/or personal communication Network (col. 4, lines 1-7). CDMA has a maximum latency variability. It is inherent that Dent's systems will therefore have a sufficient number of masks so that the receiver can discern the proper order of the packets.

As per claim 7, Dent teaches a method of determining a packet order of a received packet comprising;

applying at least one ordering mask to the received packet in a known order from a list of ordering masks to find a current ordering mask that was previously used to mask the received packet. the list of ordering masks having the known order [col. 14, lines 52-65]; and

when at least one elder of ordering mask exists in the list of ordering masks, the at least one older ordering mask occurring earlier in the known order than the current ordering mask, removing the at least one older ordering mask from the list of ordering masks [col. 14, lines 59-65, i.e. In CDMA subtractive demodulation, the scrambling mask corresponding the strongest information signal would be selected for decoding. After that signal is removed, the scrambling mask corresponding to the next strongest information signal is selected and so forth until the weakest signal is decoded].

As per claim 16, Dent teaches a communication device comprising:

packet receiver (Fig. 7, Receiver demodulator 62);

a mask store comprising a plurality of masks having a known order, the known order representing and order of transmission of a plurality of packets (Fig. 7, scrambling mask storage 66, col. Col. 15, lines 4-40);

an unmasking device being configured to unmask received packets (specialized N-Sample multiplier 68, col. 24, 46-54); and

an error detection device coupled to the unmasking device, the error detection device being configured to detect errors in unmasked received packets (Fast Walsh Transform 72 and ordering and selection 74, col. 9, lines 7-10, see also col. 15, lines 23-28).

As per claim 19, Dent teaches the mask is a key generator capable of generating keys to decrypt encrypted packets (.col. 23, lines 9-16]

As per claim 22, Dent teaches the communications device of claim 16 further comprising a decryptor coupled to the unmasking device, the decryptor being configured to decrypt unmasked packets using keys received from a key generator [Dent, col. 24, lines 46]. In view of this it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the teachings Dent within the system of Irvin to incorporate a decryptor because it does not change the overall function of Irvin system. Functionally they are equivalent if unmasking comprises the function of decryption.

As per claim 23, Dent teaches a packet formatted adapted to receive data packets and configured to supply formatted packets (Figure 7 and associated text, source coder 50), a forward error device coupled to receive the formatted packets from the packet formatter and configured to apply error codes (error correction orthogonal block coder 52).

a mask store (transmit scrambling storage 60, see also col. 14, lines 24-35) comprising a plurality of masks having a known order, said known order representing an order of transmission of a plurality of packets (col. 3, lines 5-29, i.e. each coded

information signal is then assigned a unique scrambling mask, taken from a set of scrambling masks, having certain selected auto-and cross correlation properties (plurality of ordering masks) and that the scrambling masks are ordered based on the signal strength of their respectively assigned coded signals, i.e. masking being performed in a known order, see also col. 8, lines 13-21col. 19, lines 31-47);and

a mask device (N-bit adder 53} coupled to the mask store and the forward error device and responsive thereto mask each of the formatted packets to which the error codes have been applied (col. 14, lines 36-51).

As per claim 24, Dent teaches that the packet formatter is a data packet formatter (col. 14, lines 36-37, source information is converted to blocks of binary bits in a source coder 50)

As per claim 25, Dent teaches the packet formatter comprises a vocoder (col. 14, lines 36-37, source, e.g. speech, information is converted to blocks of binary bits in a source coder 50).

As per claim 26, Dent teaches the masking device comprises an encryptor by teaching scrambling mask retrieved from the storage is modulo-2 added to the block coded signal, see also col. 23 lines 9-16, the code key K2 used for selecting scrambling masks).

As per claim 27, Bent teaches the communications device of claim 23 further comprising an encryptor coupled between the packet formatter and the forward error device, wherein the encryptor is configured to receive the formatted packets from the packet formatter, encrypt the formatted packets, and send encrypted formatted packets to the forward error device (Fig. 9 and associated text, N-bit Adder 82 and transmitter

sequence generator 84, col. 22, lines 36-49, i.e. before orthogonal coding, the M-bit block is individually enciphered by modulo adding in an N-bit adder 82 a unique enciphering bit sequence produced by a transmitter sequence generator 84 and that the pseudorandom numbers produce as a function of a cipher k1 and a code key k2 are combined with information from the source coder 80 to the produce enciphered information signals. These enciphered information signals are the spread-spectrum encoded using orthogonal or bi-orthogonal block error-correction coding in an orthogonal block coder 86).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 16-17, 19 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 5,862,160 to Irvin et al. (hereinafter "Irvin") and further in view of US Patent No. 5,771,288 to Dent et al. (hereinafter "Dent").

As per claim 16, Irvin teaches a packet receiver (see Fig. 3, col. 6, lines 22-23, demodulator receives and demodulate the signal transmitted), a mask store (col. 3, lines 66-67, col. 4, lines 4-11), an unmasking device coupled to the mask store (col. 7, line 61 through col. 8, line 4, exclusive XOR circuit) and the packet receiver, the unmasking device being configured to unmask received packets; and an error detection device [see also col. 4, lines 4-11, i.e. logic device is for combining a select mask] coupled to the unmasking device, the error detection device being configured to detect errors in unmasked received packets [logic device performs CRC error checking].

Irvin does not disclose but Dent discloses a plurality of ordering masks, the plurality of ordering masks having a known order, the masking being performed in the known order [col. 3, lines 5-29, i.e. encoding each signal with a common block error-correction code. Each coded information signal is then assigned a unique scrambling mask, taken from a set of scrambling masks, having certain selected auto-and cross correlation properties and that the scrambling masks are ordered based on the signal strength of their respectively assigned coded signals, see also col. 8, lines 13-21col. 19, lines 31-47].

Therefore, It would have been obvious to one of ordinary skill in the art to employ the teachings of Dent within the system of Irvin to unmask received packets of Irvin with a motivation to enhance encoding/decoding scheme involving scrambling/descrambling sequences for distinguishing and protecting signals in a spread spectrum environment and to increase system capacity and still maintain system integrity and a reasonable signal-to-noise ratio [Dent, col. 1, lines 18-20, col. 2, lines 49-67].

As per claim 17, Irvine teaches the communications device of claim 16 further comprising a controller coupled to the mask store and the error detection device [col. 7, line 57-61, i.e. a CPU is connected to excusive OR circuit and to the logic device. CPU transmits and receives frames to exclusive or and control signals to logic device], the controller [logic device] being configured to evaluate error information received from the error detection device [col. 8, lines 33-52], and further configured to command the mask store to provide masks to the unmasking device [col. 7, lines 61-62].

As per claim 19, Irvin teaches the mask is a key generator capable of generating keys to decrypt encrypted packets [col. 6, lines 43-64, i.e. the error protection decoder

(containing the mask store) logically combines each mask stored in the receiving system with the received signal by XoRing)].

As per claim 22, Irvin once modified teach the communications device of claim 16 further comprising a decryptor coupled to the unmasking device, the decryptor being configured to decrypt unmasked packets using keys received from a key generator [Dent, col. 24, lines 46]. In view of this it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the teachings Dent within the system of Irvin to incorporate a decryptor because it does not change the overall function of Irvin system. Functionally they are equivalent if unmasking comprises the function of decryption.

As per claim 23, Irvin teaches a packet formatted adapted to receive data packets and configured to supply formatted packets (col. 5, lines 36-39, i.e. source encoder 104, encodes input signal 108 to convert input signal into a form suitable for transmission), a forward error device coupled to receive the formatted packets from the packet formatter and configured to apply error codes (col. 5, lines 39-49, i.e. error protection encoder 112 produces parity bits according to a CRC code). Irvin encoded signals have appended error detection bits. Irvine teaches a mask store (col. 5, lines 50-54). Irvine teaches a masking device to mask each of the formatted packets to which the error codes have been applied (col. 5, lines 1-11, i.e. logic circuit 124 for logically combining the mask produced by mask selector 120 with the encoded signal 112).

Irvin does not disclose but Dent discloses masks having a known order, the known order representing and order of transmission of a plurality of packets Irvin does not disclose but Dent discloses a plurality of ordering masks, the plurality of ordering

masks having a known order, the masking being performed in the known order [col. 3, lines 5-29, i.e. encoding each signal with a common block error-correction code. Each coded information signal is then assigned a unique scrambling mask, taken from a set of scrambling masks, having certain selected auto-and cross correlation properties and that the scrambling masks are ordered based on the signal strength of their respectively assigned coded signals, see also col. 8, lines 13-21col. 19, lines 31-47].

Therefore, It would have been obvious to one of ordinary skill in the art to employ the teachings of Dent within the system of Irvin to unmask received packets of Irvin with a motivation to enhance encoding/decoding scheme involving scrambling/descrambling sequences for distinguishing and protecting signals in a spread spectrum environment and to increase system capacity and still maintain system integrity and a reasonable signal-to-noise ratio [Dent, col. 1, lines 18-20, col. 2, lines 49-67].

5. **Claims 1-4, 6, 16-17, 19-21, 23-26** rejected under 35 U.S.C. 103(a) as being unpatentable over prior art of record, Hosford et al, hereinafter Hosford (USP 5,966,450) and further in view of U.S. Patent No, 5,71,288 to Dent et al (hereinafter "Dent").

As per claim 1, Hosford teaches applying error detection codes to each of the plurality of data packets (frames, see column 1, lines 19-23). Hosford teaches masking each data packet with masks (variable masks, see column 1, line 66-column 2, line 2).

Hosford does not disclose but Dent discloses a plurality of ordering masks, the plurality of ordering masks having a known order, the masking being performed in the known order [col. 3, lines 5-29, i.e. encoding each signal with a common block error-correction code. Each coded information signal is then assigned a unique scrambling mask, taken from a set of scrambling masks, having certain selected auto-and cross

correlation properties and that the scrambling masks are ordered based on the signal strength of their respectively assigned coded signals, see also col. 8, lines 13-21col. 19, lines 31-47].

Therefore, It would have been obvious to one of ordinary skill in the art to employ the ordering masks taught by Dent in masking the data packets of Irvin with a motivation to enhance encoding scheme involving scrambling sequences for distinguishing and protecting signals in a spread spectrum environment and to increase system capacity and still maintain system integrity and a reasonable signal-to-noise ratio [Dent, col. 1, lines 18-20, col. 2, lines 49-67].

As per claim 2, Hosford teaches applying the mask to the data packets using XoRing (column 2, lines 910).

As per claim 3, Hosford as modified teaches the method of claim 1 wherein each of the plurality of data packets to which the error detection codes have been applied is masked with one of the plurality of ordering masks [Dent, col. 3, lines 5-29], the plurality of ordering masks and the known order being known by a receiver such that the receiver can discern a relative packet order using the plurality of ordering masks [Dent, col. 24, line 46-col.25, line 5].

As per claim 4, Hosford and Dent teach the masks comprise randomly generated numbers (Hosford, column 2, lines 49, A key is equivalent to a random number).

As per claim 6, Hosford teaches his system is implemented on a TDMA protocol (column 1, lines 15) and can be also used on wireline communication systems (column 6, lines 25-27). TDMA has maximum latency variability. It is inherent that Hosford's

systems will therefore have a sufficient number of masks so that the receiver can discern the proper order of the packets.

As per claim 16, Hosford teaches a packet receiver (column 3, line 10), a mask store (column 2, line 65-column 3, line 2), an unmasking device coupled to the mask store (column 3, lines 60-65). A mask store is taught by the fact that the sender generates a different mask for each data frame. An unmasking device is necessarily coupled to the sender and receiver because it is inherent that data can flow both ways. Therefore, both stations have the necessary resources to send and receive data masked data packets. Hosford teaches that data packets have error detection bits added (column 1, lines 20-23). Knowing this, the receiver inherently checks these error bits once the data packet is decrypted.

Hosford does not disclose but Dent discloses masks having a known order, the known order representing and order of transmission of a plurality of packets Irvin does not disclose but Dent discloses a plurality of ordering masks, the plurality of ordering masks having a known order, the masking being performed in the known order [col. 3, lines 5-29, i.e. encoding each signal with a common block error-correction code. Each coded information signal is then assigned a unique scrambling mask, taken from a set of scrambling masks, having certain selected auto-and cross correlation properties and that the scrambling masks are ordered based on the signal strength of their respectively assigned coded signals, see also col. 8, lines 13-21col. 19, lines 31-47].

Therefore, It would have been obvious to one of ordinary skill in the art to employ the teachings of Dent within the system of Irvin to unmask received packets of Irvin with a motivation to enhance encoding/decoding scheme involving scrambling/descrambling

sequences for distinguishing and protecting signals in a spread spectrum environment and to increase system capacity and still maintain system integrity and a reasonable signal-to-noise ratio [Dent, col. 1, lines 18-20, col. 2, lines 49-67].

As per claim 17, Hosford teaches adding error detection codes data packets so it is inherent that the device can evaluate errors and take the appropriate action. A controller is taught by Hosford where he describes both stations having a processor (column 3, line 25). Hosford teaches the masks must again be used to unmask the data packets (column 3, lines 10-14). This would require the unmasking device being coupled to the mask store.

As per claim 19, Hosford teaches the mask is a key generator capable of generating keys to decrypt encrypted packets (column 2, lines 3-8 and column 3, lines 10-13).

As per claim 20, Hosford is silent in teaching that the masks are buffered used more than once. Dent teaches reusing masks in a set more than once (column 27, lines 20-36). If masks are reused then they must be preserved in memory. It would be advantageous to reuse masks to reduce the computational time required to constant regenerate for every frame. In view of this it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the teachings of Dent within the system Hosford because it would allow the reuse of masks periodically instead of having to constantly compute new masks.

As per claim 21, Hosford explicitly teach the use of a pointer to keep track of the most recent mask pointer. Hosford does teach incrementing a frame counter. The frame counter essentially does the function of a pointer by indicating the last masked used

because the frame counter is part of the mask. It would have been obvious to one or ordinary skill in the art at the time of the invention to use the frame counter as a pointer to keep track of the most recently use masks because the sender and receiver must stay synchronized. Maintaining synchronization requires the order to be preserved and allows the receiver to know the next expected mask to be received.

As per claim 23, Hosford teaches a packet formatted adapted to receive data packets and configured to supply formatted packets (column 1, lines 16-20), a forward error device coupled to receive the formatted packets from the packet formatter and configured to apply error codes (column 1, lines 19-23). Hosford teaches digitized speech frames have appended error detection bits. Hosford teaches a mask store (column 2, line 65-column 3, line 2). Hosford teaches a masking device to mask each of the formatted packets to which the error codes have been applied (column 2, lines 415).

Hosford does not disclose but Dent discloses masks having a known order, the known order representing and order of transmission of a plurality of packets Irvin does not disclose but Dent discloses a plurality of ordering masks, the plurality of ordering masks having a known order, the masking being performed in the known order [col. 3, lines 5-29, i.e. encoding each signal with a common block error-correction code. Each coded information signal is then assigned a unique scrambling mask, taken from a set of scrambling masks, having certain selected auto-and cross correlation properties and that the scrambling masks are ordered based on the signal strength of their respectively assigned coded signals, see also col. 8, lines 13-21col. 19, lines 31-47].

Therefore, It would have been obvious to one of ordinary skill in the art to employ the teachings of Dent within the system of Irvin to unmask received packets of Irvin with

a motivation to enhance encoding/decoding scheme involving scrambling/descrambling sequences for distinguishing and protecting signals in a spread spectrum environment and to increase system capacity and still maintain system integrity and a reasonable signal-to-noise ratio [Dent, col. 1, lines 18-20, col. 2, lines 49-67].

As per claim 24, Hosford teaches the packet formatter is a data packet formatter (col.1, lines 16-17)

As per claim 25, Hosford teaches the packet formatter comprises a vocoder (digitized speech frames, see column 1, line 19).

As per claim 26, Hosford teaches the masking device comprises an encryptor by teaching that the masking device performs encryption from randomly generated numbers (keys), see column 2, lines 4-9.

6. **Claims 5 and 27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosford and Dent further in view of Weiss (USP 4,754,482).

As per claims 5 and 27, Hosford teaches the masks can be created from a cellular authentication voice privacy and encryption algorithm (column 2, lines 54-59).

Hosford is silent in disclosing the encrypting of data packets prior to applying error detection. Weiss teach appending error detection codes to encrypted data packets (Weiss, column 5, lines 2-9). Dent teaches at the subscriber level, a ciphering key enciphers individual information signals before the scrambling operation (Dent, col. 3, lines 35-39).

The error detection codes would alert the receiver if the encrypted packet experienced a transmission error. It would be advantageous to know if a transmitted packet had any errors in it. In view of this, it would have been obvious to one of ordinary

skill in the art at the time of the invention to employ the teachings of Weiss within the system of Hosford because it would allow detection of errors in transmitted encrypted data packets.

7. **Claims 7-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Weiss in view U.S. Patent No. 5,71,288 to Dent et al. (hereinafter "Dent") and further in view of Gross (USP 5,761,431).

As per claim 7, Weiss teaches a method of determining a packet order of a received packet comprising:

applying at least one mask to the received packet from a list of masks to find a current mask that was previously used to mask the received packet (column 6, lines 23-29).

Weiss does not disclose but Dent discloses a list of ordering masks having a known order and applying at least one ordering mask to the received packet in a known order (col. 3, lines 5-39).

Therefore, It would have been obvious to one of ordinary skill in the art to employ the ordering masks taught by Dent in masking the received data packets of Weiss with a motivation to enhance encoding scheme involving scrambling sequences for distinguishing and protecting signals in a spread spectrum environment and to increase system capacity and still maintain system integrity and a reasonable signal-to-noise ratio [Dent, col. 1, lines 18-20, col. 2, lines 49-67].

Weiss is silent in disclosing removing at least one older ordering mask from a list of ordering mask when one exists.

However, Gross et al teach to remove stale data packets as they reach the top of a FIFO buffer (column 14, line 14). Discarding old data packets is necessary for receiver to remain ready to process the incoming data. In view of this, it would have been obvious to one or ordinary skill in the art at the time of the invention to employ the teachings of Gross et al within the system of Weiss because it would allow one to remove older packets (after determining with masks) from the list (buffer).

As per claim 8, Weiss teaches checking the incoming packet with a synchronous sequence number, checking for errors, and updating sequence numbers when no errors are found (column 6, lines 23-39).

As per claim 9, Weiss teaches to check the errors by comparing the calculated error code with an error code that the receiver calculates (column 6, line 30-35).

As per claim 10, Weiss teaches applying stored sets of CRC's to determine if the correct packet has been received. Preservation of order is being maintained (column 12, lines 49-65). The CRC's in the list would then correspond to a particular sequence number (mask) (column 14, line 14). Weiss also teaches that if a packet is received in error that the receiving process can continue without losing synchronization. This implies that the erroneous packet is discarded (column 14, line 48).

8. **Claims 11-12 and 14-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Weiss (USP 4,754,482) in view of US. Patent No. 5,71,288 to Dent et al. (hereinafter "Dent") Dent et al (hereinafter Dent)

As per claim 11, Weiss teaches a CRC list that is used to hold incoming data packets that are received out of order (column 12, lines 49-65). The CRC is computed from the sequence number of the receiver, which is synchronized to the transmitter

(column 15, lines 15-25). These numbers are used to preserve the order of the received packets.

As per claim 11, Weiss teaches a CRC list that is used to hold incoming data packets that are received out of order (column 12, lines 49-65). The CRC is computed from the sequence number of the receiver, which is synchronized to the transmitter (column 15, lines 15-25). These numbers are used to preserve the order of the received packets.

Weiss does not disclose but Dent discloses the use of ordering masks having a known order indicating an order of packet transmission (col. 3, lines 5-29). Dent further teaches setting a temporary ordering mask equal to a next ordering mask in a list of ordering masks (col. 14, lines 52-65) Dent teaches that the order in which each information signal is decoded in the receiver is determined by the receive scrambling mask selection address applied to an scrambling mask memory (col. 19, lines 4-40).

In view of this it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the teachings of Dent within the Weiss because it would allow a two level ciphering system to improve the security of the system. The system of Weiss would still function as described now using the ordering masks in place of just a CRC.

Dent teaches the use of a memory to hold the ordering masks as they are received. It is notoriously well known in the art how to search, traverse, add, and remove entries from buffers by setting pulling a data value from memory (temporarily) to compare it to another value. While the language in the claim is not exactly identical with the method described by Weiss to traverse a memory buffer, the outcome is the same. The lists of

mask are each compared to a current received mask in order to determine which packet has been received and which order it belongs. Weiss also teaches to check the received packets for errors via the CRC (column 15, line 15).

As per claim 12, Examiner supplies the same rationale to combine Dent and Weiss. Dent teaches the current mask defines a relative transmission order of the received data packet (Dent, col.52-65, i.e. stronger coded information signals are decoded first and removed from the composite signal before weaker signals are decoded, and the scrambling masks must be ordered by the signal strength of their associated, coded information signals).

As per claim 14, Weiss teaching of the use of sequence numbers in conjunction with the ordering masks of Dent's system would determine that the lowest number received is the current order mask.

As per claim 15, Weiss is silent in disclosing the use of cryptographic keys in the masks. Dent teaches the use of cryptographic keys in the masks [col. 3, lines 34-36, at the system level, a code key is used to select one of scrambling masks, col. 3, lines 36-39].

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ the teachings of Dent within the system of Weiss because it would only allow the rightful recipient to unmask the data.

9. **Claim 13** is rejected under 35 U.S.C. 103(a) as being unpatentable over Weiss and Dent as applied to claim 11 and in further view of Gross et al (USP 5,761,431).

As per claim 13, discarding the packet because a new packet is received is not explicitly taught by Weiss. Gross et al does refer to this occurrence as a stale packet and teaches to discard this packet (column 14, line 14). This would help the receiver and

transmitter to remain synched with one another. It is also beneficial to drop late packets in some types of communication such as voice. In view of this, it would have been obvious to one of ordinary skill in the art to employ the teachings of Gross within the system of Weiss because it would allow one to discard packets, which are older than previously received packets.

Action is Final

10. **THIS ACTION IS FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taghi T. Arani whose telephone number is (571) 272-3787. The examiner can normally be reached on 8:00-5:30 Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

T. A.
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Examiner
Art Unit 2131

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